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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,660	09/19/2001	Steven M. Meehleder	CRC-128	1159
23569	7590	06/23/2004	EXAMINER	
SQUARE D COMPANY INTELLECTUAL PROPERTY DEPARTMENT 1415 SOUTH ROSELLE ROAD PALATINE, IL 60067			LUK, LAWRENCE W	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/955,660	Applicant(s) MEEHLEDER ET AL.	
	Examiner Lawrence W Luk	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Akiyama et al. (5,646,802).

As to claims 1, 15 and 17, Murowaki et al. disclose in figure 2A, column 5, lines 40-49, housing (7) formed of heat conductive material; an electrical apparatus (3, 5) positioned within said housing (7); and in figure 2A, column 9, lines 49 to column 10, line 16, a flexible printed circuit board (13), said board having a circuit printed thereon, and further having at least one heat generating electrical component (5) mounted on the outside surface (11) thereof, whereby in figure 2A, column 6, line 55 to column 7, line 17, heat generated upon operation of said electrical component is transferred to said housing and dissipated therefrom into the surroundings, but fails to disclose a flexible printed circuit board attached to at least a portion of the exterior of the housing.

Akiyama et al. disclose in figure 8, column 8, lines 62 to column 3, line 11, a flexible printed circuit board (11) attached to at least a portion (printed circuit board 3) of the exterior of the housing (2).

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. to include the flexible

printed circuit board attached to at least a portion of the exterior of the housing as taught by Akiyama et al. for providing a contained in the housing and extended on the inner surface of the base plate.

As to claims 2 and 16, Kinoshita et al. disclose in figure 8 and column 8 lines 58 to column 9, line 11, the Housing (2) has a plurality of exterior surfaces and in which said flexible circuit board (11) is adhered to at least some of said plurality of exterior surfaces (3).

As to claims 3 and 4, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 4, lines 3-12, said electrical apparatus is an electro-mechanical device, in which said printed circuit and said at least one electrical component comprise a control system for said electro-mechanical device.

As to claim 9, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 3, line 66, said electro-mechanical device is an actuator.

As to claim 10, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 5, lines 9-15, said electro-mechanical device is a solenoid.

As to claim 11, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 6, lines 42-54, said electro-mechanical device is a position sensor.

As to claims 12 and 18, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 5, lines 41-60, said printed circuit

and said at least one electrical component comprises a system for receiving and processing signals from said electro-mechanical device.

As to claims 13 and 19, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 4, lines 5-13, said partial circuit and said at least one electrical component further comprise a system for sending a control signal to said electro-mechanical device in response to a signal received from said electro-mechanical device.

As to claims 14 and 20, Akiyama et al. in view of Murowaki et al. are applied supra, and further Murowaki et al. disclose in column 6, lines 8-19, said printed circuit and said at least one electrical component further comprise means for transmitting processed signals to a location outside said electrical device.

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Akiyama et al. (5,646,802) as discussed above, and further in combination with Baurand et al (5,834,934).

As to claims 5 and 7, Murowaki et al. and Akiyama et al. discloses the apparatus as claimed, except for said electro-mechanical device is a circuit breaker and a relay.

Baurand et al. disclose in figure 2 and column 2, lines 55-58, said electro-mechanical device is a circuit breaker and a relay.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Akiyama et al. to

include a electro-mechanical device is a circuit breaker and a relay as taught by Baurand et al. for printed circuit board holding the processing circuit.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Akiyama et al. (5,646,802) as discussed above, and further in combination with Adam et al (5,528,093).

As to claim 6, Murowaki et al. and Akiyama et al. discloses the apparatus as claimed, except for said electro-mechanical device is a motor.

Adam et al. disclose in figure 1 and column 1, lines 53-61, said electro-mechanical device is a motor.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Akiyama et al. to include a electro-mechanical device is a motor as taught by Adam et al. for the printed circuit board to supported inside the motor housing and gear housing.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Akiyama et al. (5,646,802) as discussed above, and further in combination with Byrd (5,707,249).

As to claim 8, Murowaki et al. and Akiyama et al. discloses the apparatus as claimed, except for said electro-mechanical device is a rheostat.

Byrd disclose in figure 2 & 8 and column 1, lines 25-29, column 5 and line 57, said electro-mechanical device is a rheostat (89).

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Akiyama et al. to include a electro-mechanical device is a rheostat as taught by Byrd for providing a device holder that attaches to a printed circuit board.

Response to Arguments

6. Applicant's arguments filed 4/12/2004 have been fully considered but they are not persuasive. Response to arguments are as follows:

A. Applicant argues that the prior art does not show in claims 1 and 17, said 'a flexible printed circuit board attached to at least a portion of the exterior of said housing.' Kinoshita et al. shows 'a flexible printed circuit board (unit 30) attached to at least a portion of the exterior of said housing (unit 10)' (see figure 1A, and column 1, lines 51-64).

B. Applicant argues that the prior art does not show 'at least one heat- generating electrical component mounted on the outside surface thereof.' Murowaki et al. shows 'at least one heat- generating electrical component (unit 5a) mounted on the outside surface (unit 11) thereof.' (see figure 2A, column 4, lines 1-2 and lines 47-48).

C. Applicant argues that the prior art does not teach or suggest ' a flexible printed circuit board attached to at least a portion of the exterior/surface of said housing.' Murowaki et al. shows a flexible printed circuit board (unit 13) attached to at least a portion of the surface (unit 9 and 11) of said housing (unit 7). (see figure 2A, column 5, lines 50-60); Kinoshita et al. shows a flexible printed circuit board (unit FPC 30)

attached to at least a portion of the exterior/surface (unit 11, 15) of said housing (unit 10). (see figure 1A, column 2, lines 50-59).

D. In response to applicant's arguments against the references individually Kinoshita does not disclose a flexible printed circuit board that is attached to at least a portion of a housing, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

E. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Murowaki et al. and Kinoshita et al. teaches solving the flexible printed circuit problems (i.e. heat transferred).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence W Luk whose telephone number is (571)272-2080. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571)272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LWL

June 15, 2004

Lawrence W Luk
examiner
6/15/04